

laboratory cultures, the most and least favorable circumstances attending their growth and reproduction, some rule may perhaps be deduced, some combination of temperature and nutrient solution, that will make it possible at least to predict the appearance of objectionable forms. Arrangements could then be made for shutting out that particular part of the supply and preventing the contamination of all the water.

EXCURSIONS OF THE JOSSELYN SOCIETY.

M. L. FERNALD.

DURING the field-excursions of the Josselyn Botanical Society of Maine, at the annual meeting in Waterville, August 30 to September 2, many phanerogams of unusual interest were collected in Waterville, Winslow, and Belgrade. Three plants not before detected in the state were found: *Rhynchospora capillacea*, Torr., var. *leviseta*, Hill, in crevices of wet calcareous ledges by the Kennebec, Winslow; *Carex granularis*, Muhl., var. *Haleana*, Porter, common on ledgy shores of the Kennebec; and *Eupatorium purpureum*, L., var. *amoenum*, Gray, scarce, by the Kennebec, Waterville; the two former not previously known in New England. Two more species, not yet satisfactorily determined, may be new to the state. Two other plants, not before listed from Maine, though formerly collected at other stations in the state, are *Cyperus aristatus*, Rottb., abundant on sandy and gravelly banks of the Sebasticook at "Beulah," Winslow; and *Circaea intermedia*, Ehrh., in river thickets along the Kennebec, Winslow. This interesting *Circaea*, which in central Maine seems to replace the more southern *C. Lutetiana*, is a common European type, but it has never been recorded in America. The species occurs also in Piscataquis and Penobscot counties, the earliest collection having been made by the Rev. A. P. Chute, in 1847, near Hunt's, on the east branch of the Penobscot.

Some specially noteworthy plants, not before recorded from the Kennebec valley, were *Woodwardia virginica*, Smith, abundant in a bog, Belgrade; *Juncus alpinus*, Vill., var. *insignis*, Fries, in crevices of calcareous ledges by the Kennebec, Winslow; *Quercus macrocarpa*, Michx., abundant about "Beulah," also a single tree by the river, Waterville (formerly reported by Prof. E. W. Hall); *Aster novae-angliae*, L.,

abundant at "Beulah" and along the Kennebec, Winslow; *Aster tardiflorus*, L., by the Messalonskee, Waterville; *Sagina procumbens*, L., river-banks; and *Elatine americana*, Arn., very abundant in mud by the Messalonskee.

Tofieldia glutinosa, Willd., collected in 1829 by J. W. Robbins, "on the banks of the Kennebec, at Teconic Falls," but not since seen, was searched for by many members; but not until after the adjournment of the regular meetings was the plant found by E. B. Chamberlain and the writer, a single specimen growing in the midst of *Rhynchospora capillacea*, var. *leviseta*, thus reëstablishing Robbins's station. Other interesting plants collected on the excursions were *Solidago humilis*, Pursh, by the Kennebec, Waterville and Winslow; *Myriophyllum alterniflorum*, DC., Great Pond, Belgrade; *Astragalus alpinus*, L., by the Kennebec, Winslow; and *Halenia deflexa*, Griseb., var. *heterantha*, Fernald (RHODORA, i. 37), by a spring, "Beulah."

SOIL-PREFERENCES OF SOME LESS USUAL VASCULAR PLANTS IN CENTRAL CONNECTICUT.

L. ANDREWS.

As soils and altitude have much to do with the distribution of plants the town of Southington, situated in Central Connecticut, possesses from its varied conditions advantages in a botanical way probably not surpassed by any area of its extent in the state. With an altitude ranging from 100 to 1000 feet, it possesses soils which on one side extend into the granite region of western Connecticut and on the other cover extensive trap dykes, while the intermediate section, resting upon Triassic sandstone, has a covering of drift varying from heavy clay loams and gravel hills to the most barren shifting white sands. That this diversity of soil conditions favors an equal variety of vegetation is shown by the fact that one thousand species have already been collected within this area of thirty-six square miles.

In the following notes are mentioned some of the more interesting plants of Southington and its immediate vicinity.

Populus monilifera, Ait., the cottonwood, although seeming to prefer damp locations, has been found on Meriden Mountain growing among the rocks at an altitude of five hundred feet. The beautiful little orchid *Li-*